

ABSTRACT

An adaptive noise reduction method and apparatus capable of reducing efficiently variable period noise from a main input is provided.

A variable period pulse signal and a sampling clock are supplied to a counter 32 within an adaptive signal processor 30, where an input period is counted by the sampling clock and the counted value is supplied to a timing generator 34. From the timing pulse, a variable read-address generator 33 generates in turn X_v addresses 0 to M and a write-address generator 35 generates in turn X_{k-1} addresses 0 to M, respectively, and the results are input to an accumulator 36 as the read address and write address. A product $2\mu E_k$ of an error signal E_k multiplied by a step gain μ and data W_k read from the address X_k are input to an adder 38, whose output signal is delayed by a unit sample time 37 and is written into X_{k-1} address. An adaptive coefficient W_v is read from X_v address and input to a (-) terminal of an adder 9 through a data interpolation means 39.

Accordingly, pitch of noise waveform to be reduced can be variable with a change in a period of motor noise occurring when the revolution period is changed by disc motor control of DVD-RAM, by revolution speed control of other motors, and revolution period change on starting a motor and the like. Therefore, the renewal of adaptive filter coefficient becomes almost unnecessary, thus allowing noise reduction to be performed without degrading a noise canceling effect.